I.5

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

APR 30 1996

REPLY TO THE ATTENTION OF:

MEMORANDUM

SUBJECT: ON-SCENE COORDINATOR'S REPORT - Removal Action at the Formulated Products Site, Clyde, Sandusky County, Ohio (Site ID #KV)

FROM: Richard Karl, Chief R. Karl
Emergency Response Branch, SE-5J

TO: Paul Nadeau, Director
R5-R7 Accelerated Response Center, 5201-G

THRU: William E. Muno, Director R. Karl for
Superfund Division, S-6J

Attached is the On-Scene Coordinator's (OSC) Report for the removal action conducted at the Formulated Products site located in Clyde, Sandusky County, Ohio. The report follows the format outlined in the National Contingency Plan, Section 300.165. This removal was initiated on June 14, 1994, and was completed on August 17, 1994. The OSC for this removal action was Steven L. Renninger.

The site posed an immediate threat to public health, welfare, and the environment. The removal action was taken to mitigate threats posed by the presence of open pits and deteriorated drums containing incompatible hazardous materials including acids, bases, flammables, and oxidizers.

Costs under the control of the OSC are estimated at $225,587, of which $162,747 was for the Emergency Response Cleanup Services Contractor.

Any indication in this OSC Report of specific costs incurred at the site is only an approximation, subject to audit and final definitization by the U.S. EPA. The OSC Report is not a final reconciliation of the costs associated with a particular site.

Portions of the OSC Report Appendices may contain confidential business or enforcement-sensitive information and must be reviewed by the Office of Regional Counsel prior to release to the public.

The Formulated Products site **is not** on the National Priorities List.

Attachment

cc: Ernie Watkins, U.S. EPA, OERR, 5202-G, w/OSC Rpt
Kevin Clouse, OEPA, w/OSC Rpt

bcc: A. Lewis, CS-29A, w/OSC Rpt
T. Lesser, P-19J, w/OSC Rpt
R. Mayhugh, SC-9J, w/OSC Rpt
B. Ramsey, Secretary, NRT, 5101, w/OSC Rpt
D. O'Riordan, R-19J, w/OSC Rpt
R. Karl, SE-5J, w/OSC Rpt
W. Messenger, SE-5J, w/OSC Rpt
J. El-Zein, SE-GI, w/OSC Rpt
S. Renninger, OSC, SE-GI, w/OSC Rpt
ESS Reports Coordinator, SE-5J, w/OSC Rpt
EERB Site File, SE-5J, w/OSC Rpt

ON-SCENE COORDINATOR'S REPORT

CERCLA REMOVAL ACTION

FORMULATED PRODUCTS SITE

CLYDE, SANDUSKY COUNTY, OHIO

SITE ID # KV

DELIVERY ORDER NO. 5001-05-626

Removal Dates: June 14, 1994 - August 17, 1994

Emergency Response Branch
Superfund Division
Region V
United States Environmental Protection Agency

EXECUTIVE SUMMARY

Site/Location: FORMULATED PRODUCTS SITE, CLYDE, SANDUSKY COUNTY, OHIO

Removal Dates: June 14, 1994 - August 17, 1994

INCIDENT DESCRIPTION

The Formulated Products (FP) site is located at 110 East Street in Clyde, Sandusky County, Ohio. The abandoned site was operated from 1971 to 1989 as an industrial cleanser manufacturing facility. From 1955 to 1971, Hygrade Food Products Corporation (HFPC) operated the facility in the production of pet foods. The site consists of warehouse, office, maintenance and processing areas contained inside eight single and multiple story structures. In addition to the eight buildings, there are two banks of metal silos located on the northeast end of the property. The removal was performed to mitigate threats to public health and the environment posed by the presence of open and deteriorating drums of caustic soda, acids, flammables, and oxidizers. These materials posed threats to human health and the environment through direct contact and also possible explosion and fire hazards.

ACTIONS TAKEN:

The United States Environmental Protection Agency (U.S. EPA) initiated a removal action on June 14, 1994. The following removal activities were performed: drums of base, acid, and flammable liquid wastes were consolidated and transported for disposal; drums of oxidizers and flammable solids were consolidated and transported for disposal; neutral liquids were pumped and transported for disposal; base solids were bulked into roll-off boxes and transported for disposal; neutral solids were bulked into roll-off boxes and transported for disposal; non-hazardous sludge was pumped from a pit and transported for disposal; pits and trenches were filled in with concrete; RCRA-empty drums were crushed and consolidated for disposal; contaminated wood debris was cut up, consolidated, and transported for disposal; a drum of glycol ether was overpacked and transported for disposal; and PCB capacitors were also overpacked and transported for disposal. All wastes were transported off site for final disposal by August 17, 1994.

On June 30, 1994, two acetylene, two oxygen, one anhydrous ammonia, and two propane cylinders were transported off site by Ferrell Gas to their facility in Grove City, Ohio, to be evacuated, devalved, and destroyed.

On July 7, 1994, four PCB capacitors weighing a total of 661 kgs, RQ, waste polychlorinated biphenyls, were transported by Great Lakes Environmental Services, Inc., to their facility in Warren, Michigan, for incineration. Metropolitan Environmental transported 50 gallons of RQ, waste flammable liquids (ethylene glycol butyl ether), to North East Chemical Corporation in Cleveland, Ohio, for fuel blending. Metropolitan Environmental also transported two 20-cubic-yard roll-off boxes of Non-regulated, Non-hazardous solids (RCRA-empty drums), to Wayne Disposal, Inc., in Belleville, Michigan, to be landfilled.

On July 8, 1994, Samsel Services, Inc., transported 1,500 gallons of Non-regulated, Non-hazardous material to County Environmental of Wyandot in Carey, Ohio, to be landfilled.

Metropolitan Environmental transported one 20-cubic-yard roll-off box of Non-regulated, Non-hazardous solids (RCRA-empty drums), to Wayne Disposal, Inc., in Belleville, Michigan, on July 11, 1994.

On August 3, 1994, Edwards Oil Service transported 3,500 gallons of Non-regulated, Non-hazardous liquids (contains anaerobic rainwater) to their facility in Detroit, Michigan, for neutralization and metal precipitation. K&D Industrial transported one 20-cubic-yard roll-off box of cut pallets (Non-regulated, Non-hazardous solids [contains pallets]) for landfilling at Wayne Disposal, Inc., in Belleville, Michigan.

On August 17, 1994, K&D Industrial transported two roll-off boxes (containing 10 cubic yards each) and Metropolitan Environmental transported one roll-off box containing 15 cubic yards of RQ, waste corrosive solids (sodium hydroxide), to Envirosafe Services of Ohio, Inc., in Oregon, Ohio, for stabilization and landfilling. Metropolitan Environmental also transported 15 cubic yards of Non-regulated, Non-hazardous solids to Envirosafe for landfilling. Cousins Waste Control transported: 1,400 pounds of RQ, hazardous waste solids (lead, chrome), to Envirosafe in Oregon, Ohio, for stabilization and landfilling; 550 gallons of RQ, waste flammable liquids (paints), to Nortru, Inc.,(Petro Chem) in Detroit, Michigan, for fuel blending; 660 gallons of RQ, waste corrosive liquids (sodium hydroxide), and 165 gallons of RQ, waste corrosive liquids (chromium), to Cyanokem in Detroit, Michigan, for neutralization; one 15-gallon labpack of RQ, waste pesticides, solids, toxic (chlordane, lindane), and one 5-gallon labpack of RQ, pesticides, liquid, toxic (pyrethrins) to Cyanokem for incineration; and 400 pounds of RQ, waste oxidizing substance, solid, corrosive, and 400 pounds of RQ, waste oxidizing substance, solid to Cyanokem for chemical oxidation and precipitation.

The preceding information is presented in the Waste Disposal Summary which appears as Table 1 in the report. All hazardous waste off-site disposal facilities were determined to be in CERCLA compliance with U.S. EPA off-site policy at the time of transportation of the wastes. All actions taken for the removal were consistent with the National Contingency Plan.

The removal was completed on August 17, 1994, at an estimated cost under control of the OSC of $225,587, of which $162,747 was for the ERCS contractor. The On-Scene Coordinator for the site was Steven L. Renninger.

for SR 3-29-96

Steven L. Renninger, On-Scene Coordinator — Date
Emergency Response Branch
United States Environmental Protection Agency
Region V

FORMULATED PRODUCTS SITE
CLYDE, OHIO

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FORMULATED PRODUCTS SITE
CLYDE, OHIO

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Superfund Division, U.S. EPA, Region V

OSC REPORT STANDARD APPENDICES LIST*

Site Name: Formulated Products Site, Clyde, Sandusky County, Ohio

Site ID#: KV Delivery Order #: 5001-05-626

1. OPERATIONAL FILES

1-A - Action Memo
1-B - Enforcement
1-C - Site Safety Plan
1-D - POLREPS
1-E - Daily Work Reports
1-F - Air Monitoring Plan
1-G - Site Entry/Exit Log
1-H - Hot Zone Entry/Exit Log
1-I - Equipment/Material Log
1-J - Activity Log
1-K - Site Photos/Videos
1-L - Site Logs
1-M - Site Maps
1-N - Correspondence

2. FINANCIAL FILES

2-A - ERCS Delivery Order
2-B - TAT Technical Directive Documents (TDD's)
2-C - U.S. EPA Form 1900-55's
2-D - Daily Cost Summaries
2-E - Incident Obligation Log/U.S. EPA Costs
2-F - ERCS Invoices
2-G - TAT Cost Documentation
2-H - Subcontractor Bid Sheets

Emergency Response Branch
Superfund Division, U.S. EPA, Region V

OSC REPORT STANDARD APPENDICES LIST (CONT'D)

3. TECHNICAL FILES

3-A-1 - TAT Site Assessment Report
3-A-2 - TAT Quality Assurance Sampling Plan
3-A-3 - Site Contingency Plan
3-B - Analytical Results
3-C - Manifests
3-D - Disposal Information
3-E - Drum Logs
3-F - Compatibility Results
3-G - Chains of Custody
3-H - Waste Profile Sheets
3-I - OEPA File Information

* Portions of these OSC Report Appendices may contain confidential business information or enforcement-sensitive information and must be reviewed by the Office of Regional Counsel prior to release to the public.

* Note that certain files for this site are maintained elsewhere by EERB; these appendices are those files maintained by the OSC during the removal action.

1.0 SUMMARY OF EVENTS

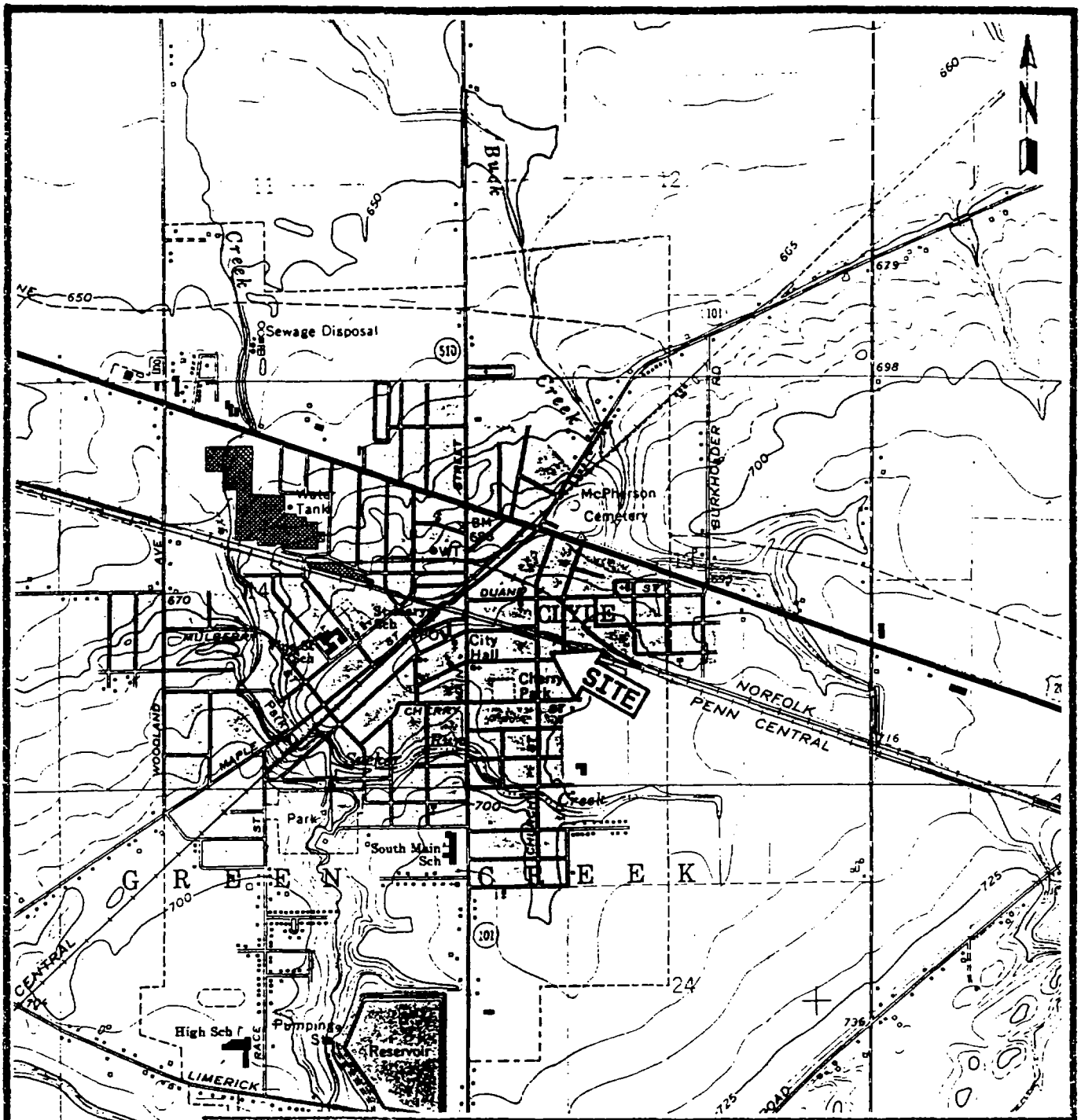
1.1 Location/Initial Situation

The Formulated Products (FP) site was an abandoned industrial cleanser manufacturing plant located at 110 East Street in Clyde, Sandusky County, Ohio (Figure 1). The plant was in operation from approximately 1971 to 1989. From 1955 to 1971, Hygrade Food Products Corporation (HFPC) operated the property as a pet food processing plant. The site consists of warehouse, office, maintenance and processing areas contained inside eight single and multiple story structures. At the west end of the main building there is a large concrete foundation which suggests that at one time there was another structure in the complex of buildings. In addition to the eight buildings, there are two banks of metal silos located on the northeast end of the facility (Figure 2).

The FP site occupies seven parcels of land in a predominantly residential area in the northeast quadrant of the city. The site is bordered to the north by residences and an active line of the Norfolk & Western (N & W) railroad; to the south by a dirt road, residences and Forest Street; to the west by East Street; and to the east by an open field and the N & W railroad.

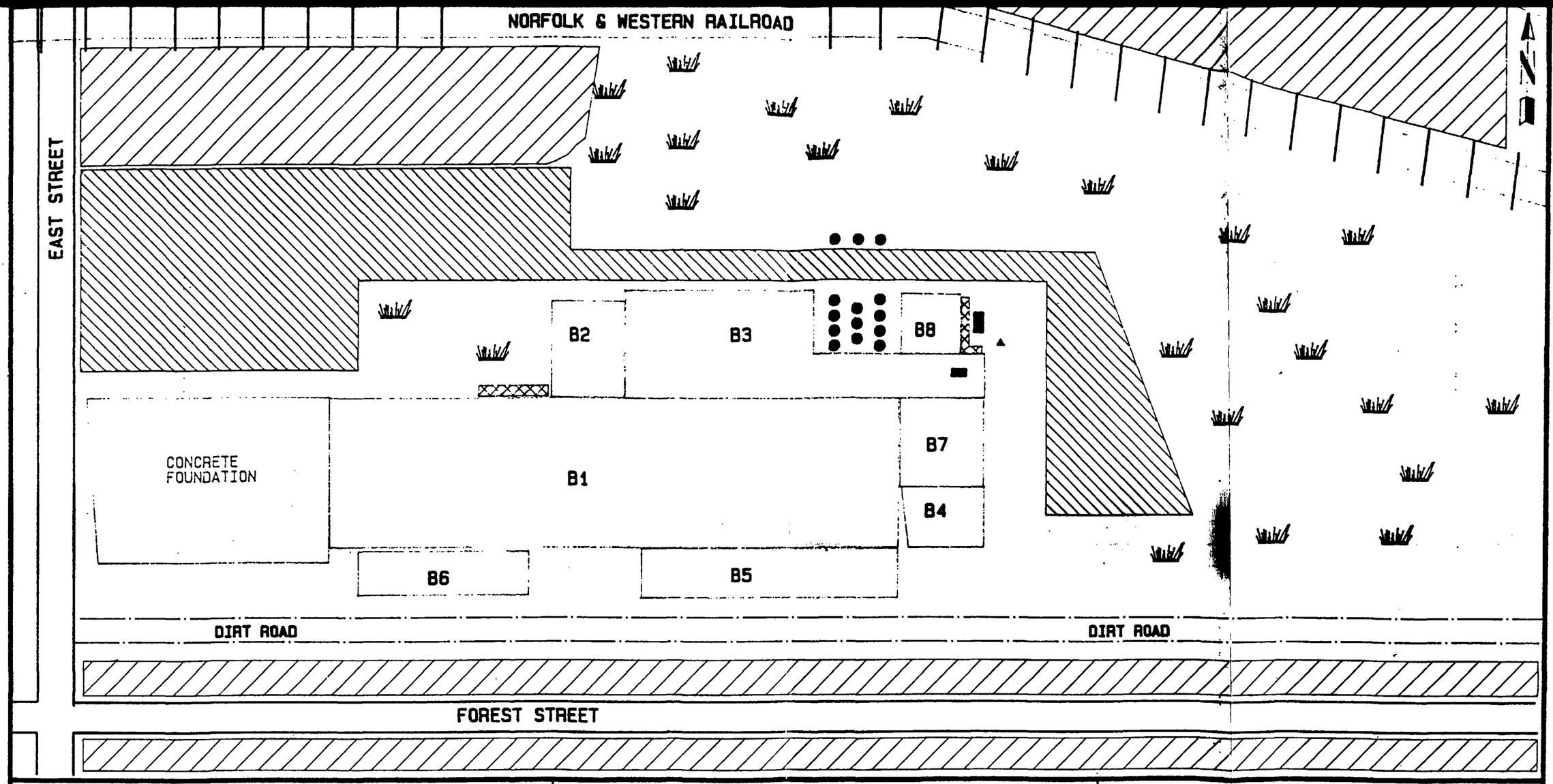
At the time of the U.S. EPA site assessment, the Ohio Environmental Protection Agency's Northwest District Office (OEPA-NWDO) had informed U.S. EPA of the presence of approximately 100 to 200 drums and an indefinite number of assorted small containers of chemicals on the site property. The OEPA believed the majority of these chemicals were associated with the manufacturing of industrial cleansers. The OEPA provided the U.S. EPA with an inventory of chemicals documented at the facility. This inventory included caustic soda, sodium perborate, sodium silicate, ethylene glycol and an assortment of lab chemicals. Further study of the listed chemicals by U.S. EPA and the TAT determined that there were, or had been, chemicals at the facility which had been used in the manufacturing of soaps, detergents, and cellophane.

In addition to the chemicals present at the site, the OEPA informed U.S. EPA that the complex was unsecured and that several break-ins had occurred; most of them believed to have been by local children. Local officials had expressed concern about the potential for fire, physical injury, continued vandalism and direct contact with the abandoned chemicals. Furthermore, the Sandusky County Department of Public Health (SCDPH) had ordered the FP facility boarded over and secured by the owner as a precaution against further unauthorized entry.



EPA U.S. EPA Region 5

TITLE Site Location Map	FIGURE 1
SITE Formulated Products	SCALE 1: 24, 000
CITY Clyde STATE Ohio	PAN EOH1026FBA
SOURCE USGS 7.5 Minute Series, Clyde, Ohio	DATE 1989
	REVISED



LEGEND

- GRAVEL ROAD/LOT
- LOADING DOCK
- RESIDENTIAL AREA
- ●●● SILOS
- B# BUILDING I.D.
- △ 5-GAL. PAILS OF CAUSTICS
- PIT
- OPEN FIELD

EPA U.S. EPA Region 5

TITLE Site Features Map	FIGURE 2
SITE Formulated Products	SCALE Not Drawn To Scale
CITY Clyde STATE Ohio	PAN EQH1026FBA
SOURCE Ecology & Environment, Inc.	DATE 1994
	REVISED

1.2 Previous Actions/Site History

On September 19, 1990, the Clyde Police Department (CPD) had investigated a report of vandalism at the FP site. The CPD documented site damage including broken windows and overturned containers. On July 28, 1992, CPD investigated the FP site again in response to a report of criminal trespass. Two juveniles were apprehended during the investigation. On April 16, 1993, the Clyde Fire Department conducted an investigation to identify health and safety issues at the FP site which needed to be resolved.

In correspondence from SCDPH Director of Environmental Health, Mary Anne Koebel, to FP site owner, Mr. John Foisy, dated May 3, 1993, the SCDPH documented two concerns at the abandoned FP site: the chemicals stored in the building; and permanently securing the building to prevent trespassing.

In a letter dated May 28, 1993, to FP site owner Foisy, SCDPH determined that the conditions at the vacant FP site were a public health nuisance per Section 3707.01, Ohio Revised Code. SCDPH noted abandoned containers of chemicals and unrestricted site access at the FP site.

In a June 16, 1993, letter to Foisy, SCDPH requested a floor plan of the site building indicating the location of the chemicals stored on site. SCDPH also instructed FP to cooperate with the Sandusky County Local Emergency Planning Commission (LEPC) regarding notification requirements.

On July 9, 1993, the OEPA conducted a complaint inspection at the FP site and documented the presence of wastes at the site. The OEPA observed drums of caustic materials which had deteriorated and spilled onto the floor of the facility. Also noted during the OEPA inspection was a drum of glycol ether and several drums of waste oil. In correspondence dated July 9, 1993, OEPA requested site owner Foisy provide to them within 15 days a response plan for the removal of wastes from the FP site.

In correspondence to Foisy dated July 22, 1993, City of Clyde Manager, Dennis Albrinck, requested an update of the removal of the abandoned 55-gallon chemical drums at the FP site. The City of Clyde requested Foisy secure the site building and actively pursue the health and safety problems at the site. Mr. Foisy failed to respond satisfactorily to these requests. On March 4, 1994, OEPA requested U.S. EPA assistance in stabilizing abandoned drums and containers at the FP site.

On March 31, 1994, U.S. EPA On-Scene Coordinator (OSC) Steven L. Renninger and Technical Assistance Team (TAT) members conducted a site investigation at the FP site. During the U.S. EPA investigation, the OSC noted approximately 450 drums and containers distributed throughout the site. Access to the FP site was

unrestricted and adjacent to residential and commercial areas. Drum label information indicated that the drums and containers contained acids, caustics, solvents, oils, oxidizers, gases, and lab chemicals. Many of the drums and containers were open or in deteriorated condition. Drums throughout the facility were noted to have leaked or spilled waste. Fiber drums containing sodium hydroxide were discovered in one building. Many of these drums were completely deteriorated, stacked four high, and exhibited severe water damage from a structurally impaired roof. Lab chemicals haphazardly stored in a small lab area were documented to be in poor condition. Some of the chemical containers were broken onto the floor or against the walls, indicating possible trespassing. Access to drum and container areas was unrestricted throughout the facility.

Areas of concern at the FP site included places where drums and containers were located inside and outside the FP facility. Areas where drums and containers were located included Buildings #1, #2, #3, #5 and #6. Residential areas were immediately north and south of the FP site perimeter. During the March 31, 1994, U.S. EPA site inspection, the OSC noted children trespassing through the FP site to gain access to adjacent residential areas.

Sample results from the March 31, 1994, U.S. EPA site inspection confirmed the presence of corrosive wastestreams. The TAT collected seven drum and container samples for laboratory analysis. Laboratory analysis of samples FP4 (pH=1.1 Standard Units (S.U.)) and FP9 (pH=0.9 S.U.) revealed the presence of corrosive waste having a pH <2.0 S.U. Laboratory results showed pH levels for FP5, FP7 and FP8 to be 10.2, 11.7 and 11.3 S.U., respectively.

On April 11, 1994, OSC Renninger and the TAT returned to the FP site and documented additional vandalism to the site since the March 31, 1994, site investigation. Several external doors had been broke open and wastestreams had been moved. The TAT obtained additional samples for field testing and laboratory analysis. Following review of material safety data sheet (MSDS) information, one drum of ethylene glycol monobutyl ether was inspected for explosive peroxides and sampled as FP11. According to MSDS information supplied by Eastman Chemical Company, ethylene glycol monobutyl ether may form explosive peroxides and can react violently with oxidizing agents. The TAT sampled and field-tested several drums in proximity to the ethylene glycol monobutyl ether drum and verified the existence of incompatible oxidizer wastestreams. Laboratory analysis of sample FP11 (flash point = 138 degrees Fahrenheit [° F]) showed the presence of ignitable waste characterized by a flash point of <140° F.

Based upon observations and analytical results, OSC Renninger established that conditions at the abandoned Formulated Products site presented an imminent and substantial threat to human health and the environment. The complete details and findings of the

March 31 and April 11, 1994, inspections are documented in a TAT Site Assessment Report submitted to U.S. EPA by Ecology and Environment, Inc., and U.S. EPA Action Memorandum dated May 17, 1994.

1.3 Threat to Public Health and the Environment

The conditions at the FP site presented an imminent and substantial threat to human health, welfare, and the environment and met the criteria for a removal action as stated in the National Contingency Plan (NCP), Section 300.415(b)(2), specifically:

- Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

The FP site was unsecured. Considering the unrestricted access to the deteriorated drums of corrosive, ignitable, and oxidizer materials on site, the potential for direct exposure to human and animal populations existed. Low pH (less than 1 S.U.) materials were documented as present at the FP site. As defined in 40 CFR 261.22, these materials are considered to be hazardous based on the Resource Conservation and Recovery Act (RCRA) characteristic of corrosivity. Drummed wastes with a flash point of less than 140° F were also documented as present at the site and considered to be hazardous as defined in 40 CFR 261.21. In addition, field test results revealed the presence of potential oxidizing materials. As a result, this waste is considered to be hazardous based on the RCRA characteristic of reactivity as defined in 40 CFR 261.23. Many drums were open or deteriorated due to weather conditions or vandalism. The history of repeated site trespassing and vandalism substantiates the potential for exposure to documented substances.

- Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers that may pose a threat of release;

During the March 31, 1994, U.S. EPA site investigation, the OSC observed abandoned drums and containers of corrosive, ignitable, and oxidizer wastestreams. Many of the drums and containers were open and in varying stages of deterioration; some had spilled contents and created incompatible situations including acids and caustics and ethylene glycol monobutyl ether and oxidizers. Also during the March 31, 1994, site investigation, the OSC observed liquid waste from deteriorated drums leaking into a floor drain. Analytical results for U.S. EPA TAT samples showed drums and containers to contain corrosive, ignitable, and oxidizer wastes.

The CPD had received several complaints of children trespassing through the site and/or entering the facility. CPD reports and observations made by the U.S. EPA OSC and TAT verified that trespassing had occurred on site and the high potential for

vandalism. The potential for vandals to spill drums or containers containing hazardous materials thereby allowing the materials to escape into the surrounding environment, was high.

- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

Northcentral Ohio typically has a substantial rainfall in the spring and autumn. Winter temperatures are often below freezing. Continuing heavy precipitation and the freeze/thaw pattern would have accelerated the deterioration of the drums and containers. During the March 31, 1994, U.S. EPA site investigation, the OSC noted that weather conditions had affected the integrity of the drums. Many of the drums were open, rusted, bulging, or completely deteriorated due to extreme weather conditions. Sodium hydroxide spilled on the floor from deteriorated fiber drums had reacted with rainwater from the structurally impaired roof.

- Threat of fire or explosion;

The FP site contained approximately 450 surficial drums and containers. Laboratory analytical results for drum and container samples collected by TAT during the March 31, 1994, site investigation showed drum and container contents included ethylene glycol monobutyl ether and oxidizers. According to MSDS provided by Eastman Chemical Company, ethylene glycol monobutyl ether may form explosive peroxides and can react violently with oxidizing agents. The OSC observed ethylene glycol monobutyl ether and oxidizers in proximity at the FP site. Therefore, the potential for an explosion existed and if such an event had occurred, contaminants could have become airborne thereby affecting the nearby population.

1.3.1 Natural Resource Damage

No formal study was undertaken as to the dangers the flammable, corrosive and oxidizing wastes posed to natural resources. However, the risks involved were noted by the OSC and removal activities were initiated as quickly as possible.

1.4 Attempts to Obtain a Response by Potential Responsible Parties

On April 18, 1994, General Notice of Potential Liability was read telephonically to the site owner, Mr. John Foisy, by OSC Renninger and Assistant Regional Counsel, Alan I. Lewis. On April 25, 1994, U.S. EPA mailed confirmation of this General Notice of Potential Liability for the Formulated Products site to Mr. Foisy. On April 28, 1994, U.S. EPA issued Requests for Information Pursuant to Section 104(e) of CERCLA to PRPs which included questions relating to the financial viability of the PRPs. Responses from the PRPs indicated that they were neither willing to take

responsibility for the site nor did they have sufficient funds to expend for the cleanup of the site. However, the Office of Regional Counsel (ORC) continues to investigate PRPs to reclaim removal costs.

On May 11, 1994, U.S. EPA gave to Mr. Foisy a request for consent for entry and access for the Formulated Products property, which he signed and returned on June 13, 1994.

1.5 Federal Actions Taken

On May 17, 1994, an Action Memorandum was signed by Jodi Lynn Traub, Acting Associate Division Director, Office of Superfund for William E. Muno, Director, Waste Management Division, approving expenditures up to $665,960 to mitigate imminent and substantial threats to human health and the environment posed by the presence of flammable, corrosive, caustic soda and oxidizing materials at the Formulated Products site. The response actions proposed in the Action Memorandum included the assessment of on-site chemical hazards, securing the site to prevent public access, stabilization of the hazardous wastes, and the removal and off-site disposal of hazardous wastes on the site. Delivery Order 5001-05-626, for $100,000, was issued to Region V Emergency Response Cleanup Services (ERCS) contractor, Environmental Quality Management, Inc., (EQM) on May 20, 1994. This initial delivery order was modified to increase the ERCS project ceiling to $200,000 on July 6, 1994.

On-site cleanup activities were conducted by Samsel Services Company (Samsel) under subcontract to EQM. The major phases of the removal action are presented below and are summarized in the site activity log included in Attachment A of this report.

1.5.1 Preliminary Arrangements - Contingency Plan

On June 2, 1994, OSC Renninger and TAT met with Clyde City Manager, Dennis E. Albrinck, Berdine Parish of the Sandusky County Disaster Services, Mike Andrews of the Clyde Fire Department, Paul Anteau of Chem Waste Management, Chief Dan Weaver of the Clyde Police Department, Melissa Winzeler of the Ohio EPA, and Ken Kerik of the Sandusky County Department of Public Health. Issues discussed included recent breaking and entering events and vandalism by local children, procedures to be followed in the event of an on-site emergency, and local emergency contacts. A contingency plan was prepared by the TAT and distributed to local emergency personnel on the same day.

1.5.2 Preliminary Arrangements - Safety, Support, and Security

On June 13, 1994, OSC Renninger, Samsel Representative, Brian McDonnel, and EQM Field Clerk Thatcher met at the site to discuss the scheduled cleanup activities and technical approach. The support and work zones were designated and plans were made for the

equipment and personnel needed to complete the proposed cleanup activities.

On June 15, 1994, the ERCS crew and equipment were mobilized to the site and site set-up was initiated. Two office trailers, one decon trailer and one trailer in which hazard categorization testing would be conducted, were mobilized to the site. Electric and telephone service as well as site sanitation services were also established. Office equipment, hot/cold water units, and tables and chairs were also mobilized to complete the command post and support zone set up.

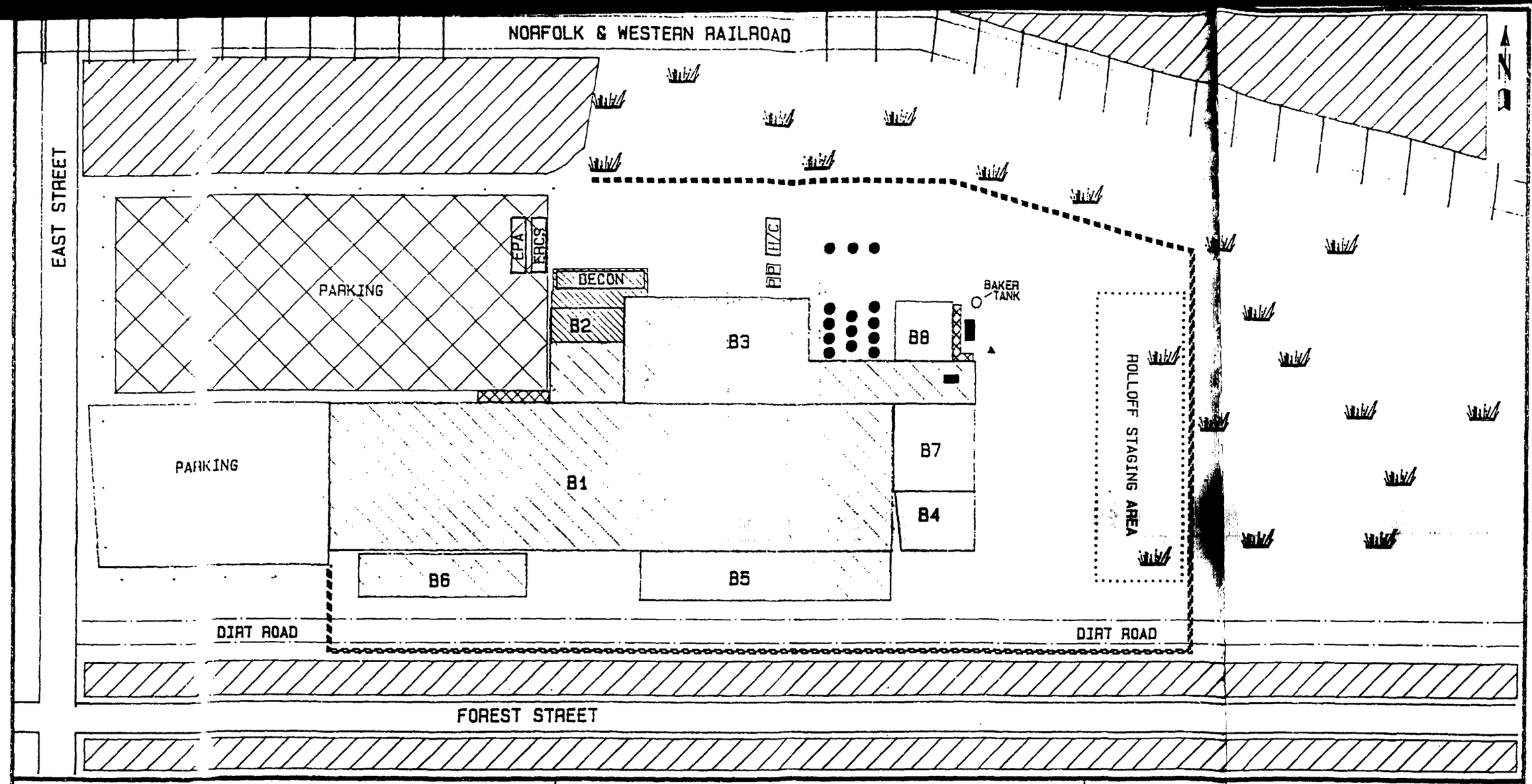
Site personnel designated the northern most room of Building 2 as the site decontamination zone. On June 16 and 17, 1994, the ERCS cleared the 25-foot by 10-foot room of debris and accumulated dirt and set up wash and rinse tubs, chairs and a table for hand tools and air monitoring equipment. Overpacks were also placed in the area and designated for expended personal protective equipment (PPE). A portable eye wash station, oxygen mask and tank, and a fire extinguisher were also included in the room.

A 10-foot by 40-foot decon trailer was staged immediately north and parallel to Buildings 2 and 3. This trailer was designated as part of the site "clean zone" and served as the crew's break area. PPE, including air purifying respirators (APRs) and self contained breathing apparatus (SCBA) were also stored in the trailer. The trailer was hooked up to the local water supply and a table, chairs, and a hot/cold water unit were added to the trailer to complete the set up.

Expended PPE, which was bagged in drum liners and removed from the decon area daily, was disposed of as a separate wastestream. Wash and rinse water was changed out at least once each day. The accumulated water was containerized and disposed of along with the neutral liquid wastestream.

In addition to establishing the decontamination zone, the ERCS erected boundary fencing and set out orange traffic cones to mark the site perimeter. Traffic cones were set out along the west side of the site and along the north side of the site immediately west of the site command post. Boundary fencing was erected along the remainder of the site perimeter. The ERCS also placed warning signs on the buildings and along the fence line. The fence and cones were established as a physical barrier around the site to deter trespassers. To enforce the designated perimeter as well as provide general site security, the ERCS arranged for a security service to be present on site during non-working hours.

Site set up was completed, the site health and safety plan was adopted by all site personnel and the site fully operational by June 17, 1994. Figures 3 and 4 show the site work zones and the setup of the decon zone.

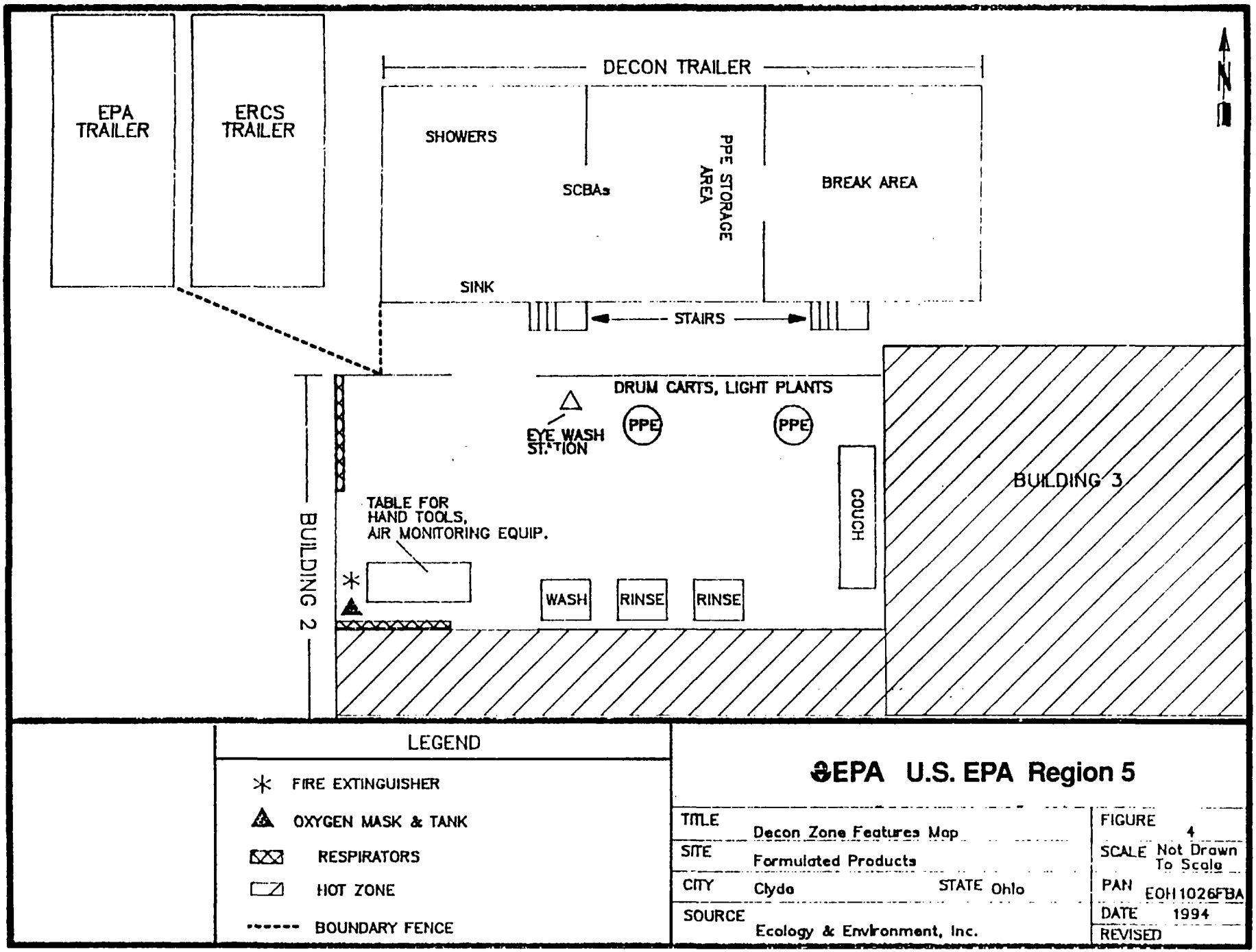


LEGEND

- SITE PERIMETER FENCE
- LOADING DOCK
- RESIDENTIAL AREA
- HOT ZONE
- SILOS
- B# BUILDING I.D.
- 5-GAL. PAILS OF CAUSTICS
- DECON ZONE
- PIT
- OPEN FIELD
- TRAFFIC CONE
- TRAILER
- PORT-A-JON
- H/C HAZCAT TRAILER
- SUPPORT ZONE

EPA U.S. EPA Region 5

TITLE Work Zones Map	FIGURE 3
SITE Formulated Products	SCALE Not Drawn To Scale
CITY Clyde STATE Ohio	PAN EOH1026FBA
SOURCE Ecology & Environment, Inc.	DATE 1994
	REVISED


EPA TRAILER
ERCS TRAILER
DECON TRAILER
SHOWERS
SCBAs
PPE STORAGE AREA
BREAK AREA
SINK
STAIRS
N
DRUM CARTS, LIGHT PLANTS
EYE WASH STATION
PPE
PPE
BUILDING 3
COUCH
TABLE FOR HAND TOOLS, AIR MONITORING EQUIP.
BUILDING 2
WASH
RINSE
RINSE
LEGEND
FIRE EXTINGUISHER
OXYGEN MASK & TANK
RESPIRATORS
HOT ZONE
BOUNDARY FENCE
EPA U.S. EPA Region 5
TITLE Decon Zone Features Map
SITE Formulated Products
CITY Clyde STATE Ohio
SOURCE Ecology & Environment, Inc.
FIGURE 4
SCALE Not Drawn To Scale
PAN EOH1026FBA
DATE 1994
REVISED

1.5.3 Drum and Pit Inventory and Sampling

From June 15 to June 28, 1994, the TAT and the ERCS inventoried and sampled the waste abandoned at the FP site. The TAT and the ERCS inventoried and sampled all the containers, stockpiles and pits found at the FP site. One crew concentrated on the inventory of Buildings 2 and 3 and materials located outside the buildings. The second crew concentrated on the inventory of the lab and office area located in Building 5. At the direction of OSC Renninger, the ERCS poured oil sorbent material around the drains and pits located in Building 3 before initiating extensive work in the area. This step was taken to prevent any spillage or leakage from the drums and containers from entering into the pits and drains.

The TAT and the ERCS assigned an alphanumeric identifier to each of the containers, drums and pits in which contents were found and to each pile of solid material. A drum log sheet was completed for each drum, container, pit and pile of material. Information from the sheets, including size of container or pile, container type and percent full, distinctive labels and/or markings, and physical and chemical characteristics of the contents, were entered into a computer database. The database served as a drum log and was used for the coordination of waste transportation and disposal throughout the project.

The TAT and the ERCS, in Level B PPE, used disposable plastic scoops, spatulas, and 1/2-inch glass thieving rods to collect samples from drums, pits, and containers. Each sample was placed into a precleaned, 8-ounce glass jar with Teflon lid which was marked with the sample's assigned identifier. A total of 310 samples were collected from the wastes abandoned at the FP site.

1.5.4 Hazard Categorization

From June 20 to June 23, 1994, the TAT conducted field hazard categorization (haz-cat) tests on the samples collected from throughout the FP facility. The TAT conducted tests inside an 8-foot by 10-foot office trailer which was outfitted with portable laboratory exhaust hoods and haz-cat materials.

TAT conducted standard haz-cat tests to determine chemical characteristics including corrosivity, oxidization potential, flammability/ignitability, and organic/inorganic properties. The test results were recorded on the drum log sheet for the corresponding sample and were later entered into the computer database. OSC Renninger used this information to establish wastestreams and coordinate the transportation and disposal of the waste.

A total of nine wastestreams were identified through the haz-cat results: base liquid, base solids, neutral liquids, neutral solids, flammable liquids, flammable solids, base oxidizers,

neutral oxidizers, and acid liquids. An additional five wastestreams were identified based on their physical characteristics: metal shavings, contaminated wood pallets, general debris, gas cylinders, and PCB-contaminated capacitors.

1.5.5 Drum Staging

On June 20, 1994, the stockpile of caustic solids and deteriorated drums located along the northcentral wall of Building 3 was dismantled. A three-man ERCS crew used a fork lift to lift wood pallets holding deteriorated drums from the top of the pile and to restage the pallets and drums along the southcentral wall of Building 3. In addition, the crew moved a pallet of chemicals found outside the buildings into Building 3 to reduce the potential for direct contact exposure to the waste by local residents. The ERCS also used a uni-loader to collect small containers of waste from Building 6 and move them to Building 3. Containers from Building 6 and outside the buildings were staged along the southeast wall inside of Building 3.

On June 23, 1994, the TAT and the ERCS restaged containers of waste by wastestream in Buildings 1 and 3. All base solids and neutral solids were left in or staged in Building 3 where consolidation of these wastestreams into separate roll-off boxes was to occur. The remaining containers of waste were restaged in Building 2 for further consolidation and preparation for disposal.

Building 2 was divided into nine designated staging areas: base solids, neutral solids, flammable liquids, flammable solids, oxidizers, acid liquids, acid solids, gas cylinders and the PCB-contaminated transformers. Prior to restaging the containers, the ERCS cleared away general debris and created a single pile of cardboard packing material collected from the building. Visqueen was layered onto the floor as a precaution against leaking containers. The TAT posted hazard placards and marked the building walls to identify the designated area for each wastestream.

In addition, using the computer generated drum log as guidance, the TAT marked each container with a two-letter identifier for the container's wastestream. The identifiers corresponded to the placards and markings placed on the walls of Building 2. TAT inventoried each container against the drum log when it was marked, and then again after it was restaged in the Building.

1.5.6 Consolidation of Pit and Drum Contents

From June 23 to June 30, 1994, TAT and ERCS consolidated wastestreams in preparation for final transportation and disposal. Wastes were bulked into 20-cubic-yard roll-off boxes, 55-gallon and 15-gallon drums, 5-gallon plastic pails and a 6,500-gallon polyethylene (poly) tank.

Base solid and neutral solid wastestreams were consolidated into individual 20-cubic yard roll-off boxes. Consolidation took place in the loading bay at the east end of Building 3. The ERCS used a backhoe to stage each roll-off box inside the bay. The ERCS also constructed a wood platform, spanning the width of the box, on which crew members would stand while dumping container contents into the box. All consolidation work was performed in level C PPE.

The ERCS used the tow motor and the uni-loader to move containers to the roll-off box and to lift the containers to the platform level where the containers would be emptied into the roll-off box. ERCS personnel manually dumped containers of lose solids. Containers in which solids were fixed were dismantled by ERCS personnel using a reciprocating saw. The contents were then dumped into the box, and the container shell discarded for disposal with the empty container/debris wastestream. The ERCS broke up waste which remained a solid core after the container was cut away. The cores were broken into pieces 10 inches or less in diameter before disposing of them in the box. This step was necessary to ensure waste acceptance at the disposal facility. Bags of solids, transformed into concrete-like blocks over time due to exposure to moisture, were crushed using the uni-loader. The fiber bag was then peeled away, and the remaining waste chunks disposed of in the box.

Base, neutral and flammable phased wastes, were separated into their respective liquid and solid waste groups for disposal. The base liquids were first decanted from the drums by pumping them into 55-gallon poly drums. Neutral liquids were pumped into a 500-gallon poly holding tank and were later consolidated with the other neutral liquids into the 6,500-gallon poly Baker tank. The remaining base solids and neutral solids were then cut or dumped from their containers into their respective roll-off box. Flammable liquids were decanted using plastic bailers and consolidated into 55-gallon steel 17-E drums. The remaining flammable solids were put into 55-gallon steel 17-H drums. The consolidation of these wastes was performed in the drum staging areas located in Building 1.

In the lab areas, approximately 320 small containers of unknown materials were found. The containers were all less than 1-gallon in capacity and made of glass, plastic, metal, or fiber. The containers were first separated, grouped according to label information and physical characteristics, and inventoried by the ERCS and the TAT. The contents of each container was then haz-cat field tested and assigned to a wastestream based upon the results. The contents of each container was then consolidated into each respective wastestream and the empty containers were crushed and added to the empty drum wastestream roll-off box. Materials containing pesticides or herbicides were later lab packed and disposed of as a separate wastestream.

Contaminated wood pallets were disposed of in a 20-cubic-yard roll-off box. Chemical materials were first scraped off and consolidated with their respective wastestream. Using a reciprocating saw and a circular saw, the ERCS then cut the pallets into 2-foot pieces and added them to the wastestream roll-off box.

The four PCB-contaminated capacitors found on site were placed in an 85-gallon overpack drum and disposed of as a separate wastestream.

The liquids from the pit in Building 3 were manually removed and consolidated with the base liquids in 55-gallon poly drums. The remaining sludge was then solidified with lime and added to the roll-off box containing the base solids. Liquids from the pit outside the facility were pumped into the 6,500-gallon poly Baker tank with the neutral liquid wastestream. The remaining sludge was then pumped into a 3,500-gallon capacity vacuum truck and transported off site for disposal as non-hazardous waste.

Acid liquids and oxidizers were separated and staged. Acid liquids were poured into 55-gallon poly drums. Base and neutral oxidizer solids were consolidated into separate 55-gallon steel 17-H drums.

1.5.7 Crushing Empty Drums

Empty drums were found throughout the FP site. The largest concentration of empty drums and containers was found on the second floor of Building 5 and at the east end of Building 3. Consolidation and crushing of empty drums and containers began in Buildings 5 and 3 on June 21, 1994, and continued throughout the FP site as necessary during the inventorying, sampling and consolidating of on-site wastes.

Elimination of empty drums and containers continued in this manner throughout the bulking of wastes. See Section 1.5.6 for details. A total of 60 cubic yards of crushed empty drums and containers were removed from the FP site.

1.5.8 Decontamination of Floors

The ERCS subcontractor, Samsel Services, decontaminated the floor of Building 3 to remove the extensive buildup of caustic material. Decontamination activities took place between July 6 and July 8, 1994. Floors were first swept and cleared of debris. Sweepings were separated into contaminated wood debris, empty drums and containers, and caustic material, and then added to their respective wastestreams. A power washer was used to thoroughly clear the floor of any remaining material. The waste water generated by the cleaning was added to the base liquids due to its high pH determined during field testing.

1.5.9 Encapsulation of Pits

After waste liquids and solids were removed from the pits and trenches inside and outside the FP buildings, OSC Renninger directed that the pits be filled in with concrete. This step was taken both to prevent rainwater from accumulating in the pits, and to eliminate the safety hazard presented by the open pits. From July 7 to July 8, 1994, J & C Redi Mix poured 26.5 cubic yards of concrete into the pits and trenches at the FP site.

1.5.10 Transportation and Off-Site Disposal of Wastes

Transportation of waste for off-site disposal occurred from June 30, 1994, until August 17, 1994. Table 1 is a summary of the waste disposed from the FP site.

On June 30, 1994, two acetylene, two oxygen, one anhydrous ammonia, and two propane cylinders were transported off site by Ferrell Gas to their facility in Grove City, Ohio, to be evacuated, devalved, and destroyed.

On July 7, 1994, four PCB capacitors weighing a total of 661 kgs, RQ, waste polychlorinated biphenyls, 9, UN2315, PGII, were transported by Great Lakes Environmental Services, Inc., to their facility in Warren, Michigan, for incineration. Metropolitan Environmental transported 50 gallons of RQ, waste flammable liquids, n.o.s., (ethylene glycol butyl ether), 3, UN1993, PGIII, to North East Chemical Corporation in Cleveland, Ohio, for fuel blending. Metropolitan Environmental also transported two 20-cubic-yard roll-off boxes of Non-regulated, Non-hazardous solids (RCRA-empty drums), to Wayne Disposal, Inc., in Belleville, Michigan, to be landfilled.

On July 8, 1994, Samsel Services, Inc., transported 1,500 gallons of Non-regulated, Non-hazardous material to County Environmental of Wyandot in Carey, Ohio, to be landfilled.

Metropolitan Environmental transported one 20-cubic-yard roll-off box of Non-regulated, Non-hazardous solids (RCRA-empty drums) to Wayne Disposal, Inc., in Belleville, Michigan, on July 11, 1994.

On August 3, 1994, Edwards Oil Service transported 3,500 gallons of Non-regulated, Non-hazardous liquids (containing anaerobic rainwater) to their facility in Detroit, Michigan, for neutralization and metal precipitation. K&D Industrial transported one 20-cubic-yard roll-off box of cut pallets (Non-regulated, Non-hazardous solids [containing pallets]) for landfilling at Wayne Disposal, Inc., in Belleville, Michigan.

On August 17, 1994, K&D Industrial transported two roll-off boxes (containing 10 cubic yards each) and Metropolitan Environmental transported one roll-off box containing 15 cubic yards of RQ, waste

TABLE 1
DISPOSAL SUMMARY TABLE
FORMULATED PRODUCTS SITE

DATE	WASTE	TRANSPORTER	DISPOSAL FACILITY	QUANTITY	DISPOSAL METHOD	MANIFEST #
06/30/94	GAS CYLINDERS: 2 ACETYLENE, 2 OXYGEN, 2 PROPANE, 1 ANHYDROUS AMMONIA	FERRELLGAS	FERRELLGAS, GROVE CITY, OH	N/A	EVACUATE, DEVALVE, DESTROY	N/A
07/07/94	RQ, WASTE POLYCHLORINATED BIPHENYLS, 9, UN2315, PGII	GREAT LAKES ENVIRONMENTAL SERVICES, INC.	GREAT LAKES ENVIRONMENTAL SERVICES, INC. WARREN, MI	661 KG	INCINERATION	MI 3590373 62602
07/07/94	RQ, WASTE FLAMMABLE LIQUIDS, N.O.S., (ETHYLENE GLYCOL BUTYL ETHER), 3, UN1993, PGIII	METROPOLITAN ENVIRONMENTAL	NORTH EAST CHEMICAL, CORP., CLEVELAND, OH	50 GAL	FUEL BLENDING	62604
07/07/94	NON-REGULATED, NON-HAZARDOUS, SOLIDS (RCRA EMPTY DRUMS)	METROPOLITAN ENVIRONMENTAL	WAYNE DISPOSAL, INC., BELLEVILLE, MI	20 CU.YD.	LANDFILL	MI 3590375 62601
07/07/94	NON-REGULATED, NON-HAZARDOUS, SOLIDS (RCRA EMPTY DRUMS)	METROPOLITAN ENVIRONMENTAL	WAYNE DISPOSAL, INC., BELLEVILLE, MI	20 CU.YD.	LANDFILL	MI 3590377 62603
07/08/94	NON-REGULATED, NON-HAZARDOUS, MATERIAL	SAMSEL SERVICES, INC.	COUNTY ENVIRONMENTAL OF WYANDOT, CAREY, OH	1500 GAL	LANDFILL	62606
07/11/94	NON-REGULATED, NON-HAZARDOUS, SOLIDS (RCRA EMPTY DRUMS)	METROPOLITAN ENVIRONMENTAL	WAYNE DISPOSAL, INC., BELLEVILLE, MI	20 CU YD.	LANDFILL	MI 3590386 62607
08/03/94	NON-REGULATED, NON-HAZARDOUS, LIQUIDS (CONTAINS ANAEROBIC RAINWATER)	EDWARDS OIL SERVICE	EDWARDS OIL SERVICE, INC. DETROIT, MI	3500 GAL	NEUTRALIZE & METAL PRECIPITATION	MI 3725407 62608
08/03/94	NON-REGULATED, NON-HAZARDOUS, SOLIDS (CONTAINS PALLETS)	K&D INDUSTRIAL	WAYNE DISPOSAL, INC., BELLEVILLE, MI	20 CU.YD.	LANDFILL	MI 3725449 62609

TABLE 1
DISPOSAL SUMMARY TABLE
FORMULATED PRODUCTS SITE

DATE	WASTE	TRANSPORTER	DISPOSAL FACILITY	QUANTITY	DISPOSAL METHOD	MANIFEST #
08/17/94	RQ, WASTE CORROSIVE SOLIDS, N.O.S., (SODIUM HYDROXIDE) 8, UN1759, PGIII	K & D INDUSTRIAL	ENVIROSAFE SERVICES OF OHIO, INC., OREGON, OH	20 CU.YD.	STABILIZE & LANDFILL	62611 62612
08/17/94	RQ, HAZARDOUS WASTE SOLIDS, N.O.S., (LEAD, CHROME), 9, NA3077, PGIII	COUSINS WASTE CONTROL	ENVIROSAFE SERVICES OF OHIO, INC., OREGON, OH	1400 LBS	STABILIZE & LANDFILL	62614
08/17/94	NON-REGULATED, NON-HAZARDOUS, SOLIDS	METROPOLITAN ENVIRONMENTAL	ENVIROSAFE SERVICES OF OHIO, INC., OREGON, OH	15 CU.YD.	LANDFILL	62617
08/17/94	RQ, WASTE CORROSIVE LIQUIDS, N.O.S. (SODIUM HYDROXIDE), 8, UN1760, PGIII	COUSINS WASTE CONTROL	CYANOKEM, DETROIT, MI	660 GAL	NEUTRALIZE	MI 3725410 62616
08/17/94	RQ, WASTE CORROSIVE LIQUIDS, N.O.S. (CHROMIUM), 8, UN1760, PGIII	COUSINS WASTE CONTROL	CYANOKEM, DETROIT, MI	165 GAL	NEUTRALIZE	MI 3725410 62616
08/17/94	RQ, WASTE PESTICIDES, SOLIDS, TOXIC, N.O.S., 6.1, UN2588, PGIII (CHLORDANE, LINDANE)	COUSINS WASTE CONTROL	CYANOKEM, DETROIT, MI	1 15-g DRUM	INCINERATION	MI 3725410 62616
08/17/94	RQ, PESTICIDES, LIQUID, TOXIC, N.O.S., 6.1, UN2902, PGIII, (PYRETHRINS)	COUSINS WASTE CONTROL	CYANOKEM, DETROIT, MI	1 5-g DRUM	INCINERATION	MI 3725410 62616
08/17/94	RQ, WASTE FLAMMABLE LIQUIDS, N.O.S., (PAINTS), 3, UN1993, PGII	COUSINS WASTE CONTROL	NORTRU, INC. (PETRO CHEM) DETROIT, MI	550 GAL	FUEL BLENDING	MI 3725411 62615
08/17/94	RQ, WASTE CORROSIVE SOLIDS, N.O.S, (SODIUM HYDROXIDE) 8, UN1759, PGIII	METROPOLITAN ENVIRONMENTAL	ENVIROAFE SERVICE OF OHIO, INC., OREGON, OH	15 CU.YD.	STABILIZE & LANDFILL	62613

TABLE 1
DISPOSAL SUMMARY TABLE
FORMULATED PRODUCTS SITE

DATE	WASTE	TRANSPORTER	DISPOSAL FACILITY	QUANTITY	DISPOSAL METHOD	MANIFEST #
08/17/94	RQ, WASTE OXIDIZING SUBSTANCE, SOLID, CORROSIVE, N.O.S., 5.1, UN1479, PGIII	COUSINS WASTE CONTROL	CYANOKEM DETROIT, MI	400 lbs	CHEMICAL OXIDATION/ PRECIPITATION	MI 3725413 62610
08/17/94	RQ, WASTE OXIDIZING SUBSTANCE, SOLID, N.O.S., 5.1, UN1479, PGIII	COUSINS WASTE CONTROL	CYANOKEM DETROIT, MI	400 lbs	CHEMICAL OXIDATION/ PRECIPITATION	MI 3725413 62610

corrosive solids (sodium hydroxide), to Envirosafe Services of Ohio, Inc., in Oregon, Ohio, for stabilization and landfilling. Metropolitan Environmental also transported 15 cubic yards of Non-regulated, Non-hazardous solids to Envirosafe for landfilling. Cousins Waste Control transported: 1,400 pounds of RQ, hazardous waste solids (lead, chrome), to Envirosafe in Oregon, Ohio, for stabilization and landfilling; 550 gallons of RQ, waste flammable liquids (paints), to Nortru, Inc.,(Petro Chem) in Detroit, Michigan, for fuel blending; 660 gallons of RQ, waste corrosive liquids (sodium hydroxide), and 165 gallons of RQ, waste corrosive liquids (chromium), to Cyanokem in Detroit, Michigan, for neutralization; one 15-gallon labpack of RQ, waste pesticides, solids, toxic (chlordane, lindane), and one 5-gallon labpack of RQ, pesticides, liquid, toxic (pyrethrins) to Cyanokem for incineration; and 400 pounds of RQ, waste oxidizing substance, solid, corrosive, and 400 pounds of RQ, waste oxidizing substance, solid to Cyanokem for chemical oxidation and precipitation.

The preceding information is presented in the Waste Disposal Summary which appears as Table 1. All hazardous waste off-site disposal facilities were determined to be in CERCLA compliance with U.S. EPA off-site policy at the time of transportation of the wastes. All actions taken for the removal were consistent with the National Contingency Plan.

1.5.11 Site Clean-up and Miscellaneous Tasks

At the request of the OSC, Samsel Services constructed a wood barrier between Building 5 and Building 1 to isolate the drum staging area from the lab and office area. Repeat visits by the PRP to the office area of Building 5 provoked this action. By having the barrier constructed, OSC Renninger was able to allow the PRP access to his personal belongings in the office area, but still restrict his access to the containerized waste.

After the 6,500-gallon poly Baker tank was pumped out, decontamination of the interior of the tank was completed by Samsel in level C PPE using a power washer. The decontamination water was pumped out and added to the neutral liquids. Once the tank was fully decontaminated, it was staged to await pick up by Baker Tanks, Inc.

1.6 Community Relations

The site is located in a small urban area in northcentral Ohio. News coverage of the removal action was limited; a single newspaper expressed interest. Throughout the removal, OSC Renninger maintained a positive rapport with both State and local agencies as well as the community and the press.

1.7 Cost Summary

EQM was the primary contractor, and Samsel Services, Inc., the primary subcontractor under Delivery Order #5001-05-626. All on-site activities were performed by EQM, Samsel Services, Inc., and their subcontractors. Major site activities commenced on June 14, 1994, and final off-site waste disposal was completed on August 17, 1994. Daily expenditures for services provided by EQM and Samsel Services, Inc., totaled $162,747. A breakdown of contractor expenditures into major categories of labor, equipment, and materials is shown in Table 2 with costs for U.S. EPA and TAT (TDD # T05-9404-036 and T05-9410-073).

Any indication of specific costs incurred at the site is only an approximation, subject to audit and final definitization by U.S. EPA. The OSC Report is not meant to be a final reconciliation of the costs associated with this particular site.

2.0 EFFECTIVENESS OF REMOVAL ACTION

2.1 Potentially Responsible Parties

PRPs identified to date by U.S. EPA include Formulated Products, Inc., the site owner, and Mr. John Foisy, the site operator. No actions were taken by the PRPs. Refer to Section 1.4.

2.2 State and Local Agencies

State and local agency representatives were extremely cooperative prior to and throughout the removal action. As discussed in Section 2.1, the OEPA, SCDPH, Clyde Fire Department, CPD, and the Sandusky County LEPC conducted several complaint investigations at the site. Several letters were sent to the site owner by all of the agencies requesting that he address the health and safety hazards on the property. On March 4, 1994, the OEPA requested assistance from the U.S. EPA in addressing the environmental threat posed by the site. A subsequent site assessment performed by the U.S. EPA and the TAT on March 31 and April 11, 1994, led to a U.S. EPA-funded removal action at the site. State and local agencies remained helpful throughout the removal action in providing background information and access to water.

2.3 Federal Agencies

The U.S. EPA provided all monetary resources for the removal at the FP site. Under the direct guidance of OSC Steve Renninger, the contents of drums, pits, pails, labpack materials, and stockpiles were sampled, assessed for compatibility, overpacked, pumped into tanks or consolidated into roll-off boxes, and finally transported

TABLE 2

SUMMARY OF TOTAL ESTIMATED REMOVAL COSTS
FORMULATED PRODUCTS SITE
CLYDE, OHIO

EXTRAMURAL COSTS:	
ERCS Contractor - EQM/Samsel(1)	$162,747
Labor/Travel/Subsistence	66,668
ERCS Equipment	7,569
Materials/Transportation/Disposal	88,510
TAT Contractor(2)	41,500
Subtotal	204,247
INTRAMURAL COSTS:	
U.S. EPA - Direct Costs	$6,800
- Indirect Costs(3)	14,540
Subtotal	21,340
ESTIMATED TOTAL PROJECT COSTS	$225,587
PROJECT CEILING	$665,960

(1) Source: EQM Final Site Report dated November 21, 1995

(2) Source: Site IOL through August 17, 1994

(3) Source: Site IOL through August 17, 1994

to approved disposal facilities. Base solids, neutral solids, crushed empty drums and containers, and wood debris and expended PPE were consolidated into individual roll-off boxes. PCB-contaminated transformers were consolidated and overpacked. Liquids from drums, pails, and pits were pumped into holding tanks or consolidated into drums. Details of these activities are discussed in Section 1.5 of this report.

2.4 Contractors

The TAT worked efficiently and was cost effective throughout the removal. The TAT remained flexible and readily adapted to the needs of the OSC, providing extra personnel needed to conduct on-site hazard categorization testing of site wastes. This arrangement enabled the OSC to receive test results while other tests were ongoing, and to quickly move forward with transportation and disposal arrangements for the waste while continuing to oversee other on-site activities.

The ERCS subcontractor, Samsel Services, Inc., was also cost effective and efficient throughout the removal.

3.0 DIFFICULTIES ENCOUNTERED

High temperatures, inadequate ventilation inside Building 3, and trespassing were the primary difficulties encountered during removal activities at Formulated Products. High temperatures and inadequate ventilation inside Building 3 raised concerns about heat stress and carbon monoxide exposure, respectively. Trespassing across the site was an ongoing problem throughout the removal in spite of fences, warning signs, and on-site security in place to deter trespassers. During working hours, site personnel regularly directed local citizens off the site, pointing out warning signs and reminding them to heed the fence line and traffic cones which marked the site perimeter. In addition, site security reported several incidents of trespassers, including the PRP, during non-work hours.

To remedy the situation, OSC Renninger made arrangements with the PRP to allow him access to designated parts of the building, only. In addition, after speaking with local police about the volume of trespassers, OSC Renninger added additional "no trespassing" signs throughout the site; especially at the east end of the site where the incidents of trespassing were higher. According to local police, U.S. EPA could prosecute site trespassers providing that "no trespassing" signs were posted conspicuously.

Removal actions at the Formulated Products site began in mid-June and continued into mid-August. During this time, northern Ohio was engulfed in several warm fronts which caused temperatures to rise

into the upper 90s. U.S. EPA's Weatherpak station, operating on site during the removal, was used to keep track of temperature, humidity, and wind speed and direction throughout the removal. In addition to the high temperatures, high humidity and minimal wind were also recurring problems.

All on-site personnel were briefed daily about health threats related to heat. Crew members were reminded and encouraged to consume sufficient fluids to replace body fluids lost through sweat and to take breaks as needed to reduce the potential for overheating. Monitoring for symptoms of heat stress was also part of the daily routine during the heat wave. In addition to these measures, OSC Renninger directed Samsel to mobilize ice vests to be worn by the crew underneath their protective suits. The addition of ice vests enabled crew members to work longer periods of time in a more comfortable environment because of the cooling effect of the ice.

During waste consolidation, inadequate ventilation in Building 3 was foundational to exposure of crew members to carbon monoxide (CO) vapors. During this operation, it was necessary for the crew to operate a fork lift inside Building 3. At times, the fork lift would be in operation for 2 to 3 hours at a time. TAT conducted continuous air monitoring for CO vapors using an Industrial Scientific CO262 Carbon Monoxide Monitor. Ventilation through Building 3 was greatly improved and the high levels of CO reduced after the crew opened doors throughout the facility at the direction of OSC Renninger.

4.0 OSC RECOMMENDATION

Increased communication between local agencies (fire departments, hazardous materials teams, local emergency management agencies) and U.S. EPA will insure prompt investigation and removal actions at uncontrolled hazardous waste sites in the future.

Form 8

WASTE MANAGEMENT DIVISION, OFFICE OF SUPERFUND
EMERGENCY AND ENFORCEMENT RESPONSE BRANCH

ORC REVIEW ROUTING SHEET FOR OSC REPORTS

SITE: Formulated Products

LOCATION: Clyde, Ohio ID# KV

DATE: 3-26-96

FROM: Steven L. Renninger
On-Scene Coordinator
Phone #s 216-522-7260

_____
OSC Report Coordinator
#_____

TO: Alan Lewis
Site Attorney

We request that you review the attached final draft OSC Report for liability and cost recovery issues. Please review the final draft thoroughly at this time to avoid delays in the final sign-off process. Please note that the Memorandum of Understanding between the Waste Management Division and the Office of Regional Counsel (10-22-90) requires that you review and comment upon a draft OSC Report within ten (10) days. If you do not respond within this time we will assume you have no problems with the report as written.

DATE: _____

FROM: Alan Lewis
Site Attorney Phone #

TO: Steven L. Renninger
On-Scene Coordinator

_____
OSC Report Coordinator

I have reviewed the subject report and except as noted below on the attached annotated pages, the report is approved from ORC perspective for internal publication. I understand that confidential/sensitive material in the appendices will be redacted prior to any public release.

_____ _____
Site Attorney Date

Note: A copy of this review/approval sheet should be forwarded with the sign-off copy of report